

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (currently amended): A multiplexing method of transport stream for multiplexing encoded data and forming a transport stream, said multiplexing method comprising the processes of:

extracting process of extracting from a storage medium desired access units which are units of access of encoded data for a special reproduction;

eliminating process of eliminating old time information for said access units;

generating process of generating time information for said access units ~~transport stream~~;  
controlling process of controlling transfer timing of access units so as to conform to said time information, said access units being units of access of encoded data; and

    multiplexing process of multiplexing said access units and said time information, and forming said transport stream.

2. (original): The multiplexing method of transport stream according to claim 1, wherein said time information contains time reference information that provides a time reference of said transport stream and reproduction time information that stipulates reproduction time of said access units.

3. (original): The multiplexing method of transport stream according to claim 2, wherein said reproduction time information is a PTS (Presentation Time Stamp) embedded in a PES header of a PES packet.

4. (original): The multiplexing method of transport stream according to claim 3, wherein transfer timing of said access units and transfer timing of PES headers each having said PTS(Presentation Time Stamp) embedded are controlled so as to be able to be switched based on an enable signal.

5. (original): The multiplexing method of transport stream according to claim 2, wherein each of said access units is newly provided with a parameter that gives a storage quantity of a virtual input buffer at time of reproduction or decoding timing.

6. (original): The multiplexing method of transport stream according to claim 5, wherein said parameter is set to a fixed value with due regard to a transfer time of said access unit having a maximum data quantity.

7. (original): The multiplexing method of transport stream according to claim 5, wherein said parameter is set to a variable value with due regard to transfer time values of said access units.

8. (original): The multiplexing method of transport stream according to claim 1, wherein said transport stream is transmitted as packets by taking a TS(Transport Stream) packet as unit.

9. (original): The multiplexing method of transport stream according to claim 8, wherein TS(Transport Stream) packets includes TS packets each formed of only time information.

10. (currently amended): A multiplexing apparatus of transport stream for multiplexing encoded data and forming a transport stream, said multiplexing apparatus comprising:

an extracting device for extracting from a storage medium desired access units which are units of access of encoded data for a special reproduction;

an eliminating device for eliminating old time information for said access units;

a generating device for generating time information for said access units~~transport stream~~;

a controlling device for controlling transfer timing of access units so as to conform to said time information, said access units being units of access of encoded data; and

a multiplexing device for multiplexing said access units and said time information, and forming said transport stream.

11. (original): The multiplexing apparatus of transport stream according to claim 10, wherein said time information contains time reference information that provides a time reference of said transport stream and reproduction time information that stipulates reproduction time of said access units.

12. (original): The multiplexing apparatus of transport stream according to claim 11, wherein said reproduction time information is a PTS(Presentation Time Stamp) embedded in a PES header of a PES packet.

13. (original): A multiplexing apparatus of transport stream according to claim 12, wherein transfer timing of said access units and transfer timing of PES headers each having said PTS(Presentation time stamp) embedded are controlled so as to be able to be switched based on an enable signal.

14. (original): The multiplexing apparatus of transport stream according to claim 11, wherein each of said access units is newly provided with a parameter that gives a storage quantity of a virtual input buffer at time of reproduction or decoding timing.

15. (currently amended): A storage and reproduction system for conducting storage processing and reproduction processing of a transport stream obtained by multiplexing encoded data, said storage and reproduction system comprising:

a multiplexing device for multiplexing said encoded data; and

a forming device for forming a transport stream by using a multiplexing device comprising:

an extracting device for extracting from a storage medium desired access units which are units of access of encoded data for a special reproduction;

an eliminating device for eliminating old time information for said access units;

a generating device for generating time information for said access units;

a generating device for generating time information for said transport stream;

a controlling device for controlling transfer timing of access units so as to  
conform to said time information, said access units being units of access of encoded data; and

a multiplexing device for multiplexing said access units and said time  
information, and forming said transport stream.